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Retrospect of a Coleopterist for 1907.

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The year which has just closed has been marked by a greater increase to our list than I have had to chronicle for some years, and it is particularly interesting to note that two of the additions are species new to science. I begin, as usual, with an account of these additions to the list.

Haliplus immaculatus, Gerh. (*Ent. Mo. Mag.*, vol. xliii., p. 4). Mr. Newbery introduced this species on specimens taken by Mr. W. H. Tuck near Bury St. Edmunds. It is the most parallel-sided of the *ruficollis* group, and the dark lines are broader and more distinct than in *striatus*, Shp., and *fluviatilis*, Aub. Mr. Newbery gave a table to separate the four species of this group.

Laccobius sinuatus, Mots. (*loc. cit.*, p. 6).—Dr. Joy and Mr. J. R. le B. Tomlin took four specimens at Lundy Island in April 1906; it has also been taken at Cambridge (Gorham), and in North Wales (W. E. Sharp). In his "Coleoptera of the British Islands" (vol. i., p. 228), Canon Fowler says that *sinuatus* is a synonym of *nigriceps*, Thoms.; in coming to this conclusion he has apparently followed Dr. Sharp, who, in a revision of the British species of the genus (*Ent. Mo. Mag.*, vol. xxi., p. 85), said "the determination of Motschoulsky's *sinuatus* as *nigriceps* of Thomson is pretty certainly correct." The European authorities do not agree with this conclusion of Dr. Sharp; in both the first and second editions of the "European Catalogue of Coleoptera," and in Ganglbauer's "Die Käfer von Mittel Europa" (vol. iv., p. 253), *nigriceps*, Thoms., and *sinuatus*, Mots., are treated as distinct and separate species; Ganglbauer, however, says of *sinuatus*, Mots., "dem *nigriceps* aüsserst nahestehend," and, in the table for separating the species of the genus, he relies upon one sexual character only, namely that the under-surface of the intermediate femora in *nigriceps* is thickly punctured and pubescent. The Rev. H. S. Gorham (*loc. cit.*, p. 54), referring to his Cambridge specimen, said he did not agree with the above opinion that they were *sinuatus*, and he described them as a new species *oblongus*. I must confess that this appears to to me only to increase the existing confusion, and, in discussing Ganglbauer's character for the male of *nigriceps*, Mr. Gorham said that the "bristles" were only represented in his specimens by "short golden pubescence," but I would point out Ganglbauer himself used

the word "pubeszenz"; the term "bristle" is due to Messrs. Joy and Tomlin. We have further, as a definite character, the thick punctuation of this portion of the intermediate femora of the males; in fact if the male characters given by Ganglbauer are to be depended upon, there can be no doubt that we have two species, though in general appearance they are very similar.

Paracymus aeneus, Germ. (*Ent. Rec.*, vol. xix., p. 254).—Mr. R. S. Mitford introduced this species on specimens taken by Mr. Harwood in North Essex, in 1898; this species has unicolorous red palpi, red legs, and is smaller and narrower than *nigroaeneus*, F.

Ochthebius viridis, Peyron (*Ent. Mo. Mag.*, vol. xliii., p. 172).—This species has been confused in our collections with *marginipallens*, Latr.=*pusillus*, Steph.; both occur in this country (I have taken the latter at Rye). Mr. Newbery in introducing the species, gave a table to separate the four species of the group of the genus, which have two transverse impressions and an indistinct central furrow on the thorax. Ganglbauer gives the length of both the above species as 1·4mm.-1·5mm. Mr. Newbery says the length in both cases is 1mm., which, judging from my specimens, is too small.

Hydraena longior, Rey (*loc. cit.*, p. 172).—Mr. E. A. Newbery introduced this species, and is apparently of opinion that all the insects which have hitherto stood in our collections under the name of *H. angustata*, Stm., must be referred to *longior*, he gave characters for separating the two species, and stated that he had records of *longior* from Brockenhurst, Exeter, Polmont, and North Wales; from the records given by Ganglbauer for *angustata*, it appears rather unlikely that it will occur in this country.

Hydraena britteni, sp. nov. (*loc. cit.*, p. 79).—Dr Joy has described this new species from specimens taken by Mr. Britten in Cumberland; examples were sent to Ganglbauer, who was unable to identify them, but who was convinced they were not *nigrita*, Germ.; he suggested they might be *morio*, Kiesw., a species apparently confined to southeast Europe. After a careful examination Dr. Joy came to the conclusion that it was a species new to science; he found that the form of the terminal joint of the maxillary palpi in the males was a most important character, and, in his paper, he gave drawings to show the form of this joint in the males for the four species *britteni*, *riparia*, *nigrita* and *morio*; it is quite possible to separate the males of these species by this character alone.

Aleochara discipennis, Muls. et Rey (*loc. cit.*, p. 102).—Mr. G. C. Champion recorded this species as taken by Dr. Capron near Shiere, and by Commander Walker at Queendown Warren, in sheeps'-dung; it is like a small *fuscipes*, F., with antennæ like *lanuginosa*, Gr.

Phalacrus hybridus, Flach. (*loc. cit.*, p. 223).—Mr. E. A. Newbery has added this species to our list, in an article dealing with all the British species of the genus; he pointed out that it had been confused with the very common species *corruscus*, Pk., but might be easily separated from that species by the fact that its thorax was not alutaceous, as was that of *corruscus*. I find I had taken it at Sheerness.

Phalacrus championi, Guill. (*loc. cit.*, p. 224).—Mr. Newbery in the above article also introduced this species; he said that the insects formerly considered to be *brunnipes*, Bris., belong to this species, but,

as will be seen later on, I am of opinion that we cannot delete *brunnipes* from our list.

Gnathoncus nidicola, sp. nov. (*Ent. Rec.*, vol. xix., p. 133).—Dr. Joy described this species, new to science, from specimens taken in birds' nests; the describer stated that he found constant characters to separate it from *rotundatus*, Kug., which, moreover, never occurs in birds' nests; compared with this latter species it has broader anterior tibiæ, which have also smaller teeth with flatter intervals between them, and the apex of the elytra is dull and closely punctured.

Enicmus fungicola, Thoms. (*Ent. Mo. Mag.*, vol. xliii., p. 103).—This species was found by Mr. H. Britten in fungus in Cumberland; in introducing it, Mr. E. A. Newbery gave a table separating it from *rugosus*, Hbst., and *testaceus*, Steph. Mr. Champion discovered that he had taken it at Aviemore in 1874, and recorded it as *rugosus*; it was also taken by Mr. Day in the Eden valley in 1901.

Cartodere argus, Reitt. (*loc. cit.*, p. 136).—Mr. Newbery stated that he possessed a specimen of this species, which was taken a few years ago in a wholesale druggist's shop in London; he had confused it with *C. filiformis*, Gyll., and was of opinion that it was probably not indigenous; it has very prominent eyes.

Cryptophagus subdepressus, Gyll. (*loc. cit.*, p. 225).—Taken near Strathpeffer, by Dr. Joy, by beating firs; in general shape and size it resembles *C. scanicus*, L., but the punctuation is much thicker, and the pubescence finer and shorter. Mr. G. Champion has taken it (1905) at Woking, and (1907) at Guildford.

Cryptophagus pallidus, Stm.—Dr. Joy also introduced this species of the genus as new to our list. It has probably been confused with *dentatus*, Hbst.; his attention was drawn to the matter by Mr. Britten. It has been considered by many authorities to be a form only of *dentatus*, but in Ganglbauer, and in the second edition of *The European Catalogue of Coleoptera*, it is considered a good species. Ganglbauer says that he finds the characters on which he relies for separating the two species are quite constant, and that *dentatus* is a bark insect, while *pallidus* occurs in flowers; in my own experience *dentatus* occurs far more commonly in haystack refuse than under bark.

Cis dentatus, Mellié (*Ent. Rec.*, vol. xix., p. 136).—Mr. Donisthorpe said this species was taken by Mr. R. S. Mitford at Sandown, Isle of Wight, by beating shrubs; in introducing it Mr. Donisthorpe gave characters for identifying it and separating it from *bidentatus*, Ol. He said it was superficially like *alni*, Gyll.

Apion kiesenwetteri, Desb. (*Ent. Mo. Mag.*, vol. xliii., p. 52).—This species Mr. Champion stated had been confused hitherto with *A. fuscirostre*, F. He gave characters to separate it, and stated that it occurred on *Genista tinctoria*; it had been taken by Mr. Holland at Sandown in 1906, by himself at Chattenden in 1872, and by Commander Walker in the same locality in 1873 and 1894.

As a result of one of the above records, apparently *Hydraena angustata*, Stm., must be deleted from our list, and, in his note on the species of the genus *Phalacrus*, Mr. Newbery also stated that, in his opinion, *P. humberti*, Rye, and *P. brisouti*, Rye, must be rejected, and that *P. brunnipes*, Bris., must disappear, but the first of these has generally been considered to be only a variety of *corruscus*, and, as Mr. Newbery confesses that he has not seen Mr. Rye's types, I am of

opinion that this variety must be allowed for the present to stand. In regard to *brisouti*, Rye, there seems to have been hitherto much confusion, due to the fact that, in the *Entomologist's Annual*, 1871, p. 67, Mr. Rye introduced into the British list *P. brunnipes*, Bris., on the strength of specimens taken by Dr. Sharp at Chatham and Lymington, by himself at Lee Pit, and by Mr. Champion at Gravesend, but in the *Ent. Mo. Mag.* for 1872, p. 8, he stated that he had, since he made the above record, submitted the specimens to M. Brisout, who stated that they were not his *brunnipes*, but a species new to science, and Mr. Rye then described them as *brisouti*, sp. nov. These specimens were also submitted to M. Tournier, who was then working at the family, and were declared by him to be new to science. Mr. Rye further stated that he had submitted another specimen from Mr. G. R. Waterhouse's collection to M. Brisout, and that gentleman had informed him that this insect was his *brunnipes*. Unfortunately, Canon Fowler, in his *Coleoptera of the British Islands*, vol. iii., p. 149, appears to have overlooked this correction by Rye of his first note, and has ascribed to *brunnipes*, Bris., all the records which belonged to *brisouti*, Rye, and I think this mistake has probably misled continental authors, and apparently Mr. Newbery was not aware of this unfortunate slip of Canon Fowler. Since we have Mr. Rye's statement that M. Brisout himself, who presumably had his own types before him at the time, declared that Mr. Waterhouse's specimen was his *brunnipes*, I am of opinion that that species is British and must remain in our list, especially as Mr. Newbery gives no reason for his assumption that the specimen of *brunnipes*—I would point out it is never anywhere called *brunnipes*, Rye—above alluded to is *championi*, Guill. I am further of opinion that *P. brisouti*, Rye, which is retained in the latest European catalogue, must also be retained in our list, until by an examination of Mr. Rye's type, which Mr. Newbery has not made, the insects are shown to be only a form of *corruscus*, Pz. My conclusion is that Mr. Newbery has introduced two new species to our list—*P. hybridus*, Flach., and *P. championi*, Guill., that he has wrongfully deleted *P. brunnipes*, Bris., and that *P. brisouti* must also stand for the present, and *humberti* also as a var. of *corruscus*, Pz.

Canon Fowler (*Ent. Mo. Mag.*, vol. xliii., p. 30) expresses his opinion that the specimen upon which Mr. F. Bouskell introduced *Aphodius sturmi*, Harold (*Ent. Rec.*, vol. xv., p. 92) is only a small immature *A. nitidulus*, F.; as I have not seen the specimen, I can offer no opinion upon the correctness of the original determination, but for the present the species must be relegated to the doubtful list.

Mr. Newbery (*loc. cit.*, p. 123) stated that he had submitted specimens of *Melanotus rufipes*, Hbst., and *M. castanipes*, Pk., to M. Bedel, who was of opinion that they were only forms of one species, and he further drew attention to the fact that *castanipes* is sunk as a synonym of *rufipes* in the latest European catalogue. To my mind this latter fact by no means settles the question, since, in the same catalogue, *Cryptohypnus pulchellus*, L., and *C. sabulicola*, Boh., are considered synonymous, and this they most certainly are not (see in confirmation of my opinion Mr. Gahan's note on the genus [*loc. cit.*, p. 121]). I must here raise a respectful protest against this tendency on the part of some of our coleopterists to accept the opinion of some continental authority, who, in many cases, has not seen the original types, as once for

all settling some difficult question of synonymy. Canon Fowler's remarks (*loc. cit.*, p. 30) on this point are well worthy of quotation. "The determination of continental authorities should not be accepted as absolutely final, without being verified, as is too often the case." In this case Mr. Newbery did submit some of Mr. Rye's specimens to M. Bedel, but as that gentleman speaks of *castanipes* as a "form," the whole matter turns once more upon the question of what is a species, and as I have taken specimens in the Highlands, and seen others taken there, which to my mind are far more distinct when compared with the ordinary forms of *rufipes* than is the case with many allied, but on all hands admitted, species, I shall myself for the present continue to consider *castanipes*, Pk., as a genuine species.

In a very interesting note (*loc. cit.*, p. 102) Mr. J. H. Keys showed that the insect known as *Aleochara morion*, Grav., has its tarsal formula 4, 5, 5: it is not, therefore, a true *Aleocharina*, but as it has the minute accessory joint of the palpi, it cannot be a *Myrmidoniina*, it is intermediate, and he proposed for its generic name *Exaleochara*.

I have already alluded to the fact that Mr. Gorham has described *Laccobius oblongus* as a species new to science on what I consider to be insufficient grounds; that gentleman also introduced as new to our list (*loc. cit.*, p. 53) *Oxypoda metatarsalis*, Thoms., on specimens taken in moles' nests; there can be no doubt, however (Mr. Gorham himself suggests the possibility) that these insects were *O. longipes*, Muls., which has long stood in our lists on the authority of a specimen taken by Dr. Sharp at Aberlady. In the latest European Catalogue *metatarsalis* is treated as a synonym of *longipes*, and the difference of habitat and locality on which Mr. Gorham relied is of no value, as I have this year taken in moles' nests at Lowestoft, and again by sweeping at the edge of a forest road in the Newtonmore district in Invernessshire, specimens between which a most careful examination fails to show the slightest difference, and both sets of specimens agree perfectly with the descriptions given for *longipes*, and those now given for *metatarsalis* by Mr. Gorham. When introducing *longipes* Mr. Rye stated that *metatarsalis* was a synonym.

In another note (*loc. cit.*, p. 205) Mr. Gorham expressed the opinion that we have a second species of *Simplocaria*, distinct from *semistriata*, F.; the two specimens on which he based his opinion are narrower than *semistriata*, darker in colour, and have deeper striæ, which are continued almost to the apex of the elytra. Mr. Gorham thinks they are probably the insect alluded to by Stephens, as *picipes* of Olivier; this latter name is considered by Ganglbauer (*Die Käfer von Mittel-Europa*, vol. iv., p. 59) to be merely a synonym of *semistriata*, while, since Mr. Gorham says the two specimens are smaller than average *semistriata*, they can hardly be *picipes*, Gyll., which is considered by Ganglbauer to be a synonym of *metallica*, Stm. I am afraid that, until Mr. Gorham can give more definite information, this proposed addition must be placed in the doubtful list.

The valuable paper by Mr. G. A. Crawshay on "The life-history of *Tetropium gabrielli*, Ws.," to which I shall allude later on, makes another deletion from our list necessary, namely, *Tetropium crawshayi*, Shp., as it is shown to be only a synonym for *gabrielli*.

One new variety has been added to our lists, *Cteniopus sulphureus*, L., var. *bicolor*, F., taken by Mr. Donisthorpe at Deal.

Summing up, we have fifteen undoubted additions to our list, and

one which should go in my suggested list of introduced species, and lastly one doubtful addition (the *Simplocaria*), while, on the other hand, two names disappear, and another may have to go if further examination confirms Mr. Newbery's views as to *Phalacrus brisouti*, Rye.

The retrospect this year will be of such unusual length that I am compelled to curtail considerably my references to the captures of rare species during 1907, and can only allude to a few of the more important. Mr. H. J. Thouless has again captured *Oedemera virescens*, Linn., near Norwich, and *Malachius barnevillei*, Puton, at Hunstanton. Mr. P. de la Garde has taken *Arena octavii*, Fauv., at Dawlish Warren, and he gave, in recording the capture (*Ent. Mo. Mag.*, vol. xliii., p. 124), a description of it and the characters which separate it from *Phytosus balticus*, Kr., it has also been taken by Mr. Attle at Llanbedr, Wales. Mr. West has taken *Oxylaemus variolosus*, Duft., at Darenth, and Mr. P. de la Garde has found *Hydrochus nitidicollis*, Muls., in flood-refuse from the River Teign. *Trichonyx sulcicollis*, Reich., has been found in the New Forest by Mr. Champion and Commander Walker; the former gentleman has taken *Cryptophagus cylindrus*, Kies., at Chobham, and *Dorytomus tremulae*, Pk., and *Melanophthalma similata*, Gyll., near Guildford, and *Rhizophagus coeruleipennis*, Sahlb., at Woking, Mr. P. de la Garde also took this species out of flood-refuse in the River Teign. At St. Margaret's Bay I found *Hypera tigrina*, Boh., and *Apion semivittatum*, Gyll., in numbers, and Mr. Donisthorpe found the latter insect plentifully at Deal. Many of the moles' nest specialities have again been found in various parts of the country, such as *Onthophilus sulcatus*, F., at Coulsdon, Mr. Bedwell; *Quedius longicornis*, Kr., at Guildford, Mr. Champion; *Medon castaneus*, Gr., at Oxford, Commander Walker; *Quedius rexans*, Epp., and *Hister marginatus*, Er., in Scotland, near Strathpeffer, Dr. Joy. *Euplectus minutissimus*, Aub., has again turned up at Great Salkeld to Mr. Britten, and at Winlaton-on-Tyne to Mr. Bagnall. Mr. Britten has also found the rare little weevil *Ceuthorhynchidius posthumus*, Germ., on its foodplant at Great Salkeld. Mr. Donisthorpe secured several specimens of *Maydalis duplicata*, Germ., at Newtonmore, during our Highland trip, and we found, last April, *Quedius riparius*, Kell., in some numbers in its old locality at Porlock.

Several interesting papers have appeared during the past year in the entomological journals. Dr. Joy and Mr. J. R. le B. Tomlin (*Ent. Mo. Mag.*, vol. xliii., p. 27) have described, in a paper entitled "Further Notes on the Coleoptera of Lundy Island," the results of their visit to that island in April, 1906, the total number of species of coleoptera now recorded from the island amounts to 462, a surprising total from such a limited area; some of the species found on the island are most unexpected. I have myself been recently naming a collection made on St. Kilda by Mr. Waterston, and have also had submitted to me a list of beetles obtained by Mr. Gordon Hewitt during a visit to the island, and also a list prepared by Dr. Joy from specimens obtained from birds' nests, moss, etc., sent to him from the island; as a result the complete list, which will appear in the January number of the *Annals of Scottish Natural History*, will bring up the record from St. Kilda to 111 species. I have recently been making arrangements which will, I hope, enable me during 1908 to begin an exhaustive study of the coleopterous fauna of the smaller islands which lie round the coast of Scotland.

Life-histories are dealt with in two papers, namely, in Dr. Bailey's note (*loc. cit.*, p. 3) on the occurrence of *Rhizophagus parallelocollis*, Er., in buried corpses, and in Mr. Morley's records of his field-observations on the occurrence of coleoptera in vertebrate carrion (*loc. cit.*, p. 45); during ten years he had noted 113 species, and of these certain species are not genuine carrion feeders, but were merely sheltering beneath it.

Questions of synonymy, specific characters, etc., are the main features of three valuable papers. Mr. C. J. Gahan (*loc. cit.*, p. 121), in his paper "On the Elaterid genera *Hypnodius*, Steph., and *Cryptohypnus*, Esch.," showed that the former genus must stand, and that its type is *riparius*; he also proved that *sabulicola*, Boh., and *pulchellus*, L., were perfectly distinct species. Mr. A. J. Chitty (*loc. cit.*, p. 164), in his paper "Notes on the genus *Cryptophagus*, with a table of species," has embodied the results of a careful research into the characters of the species of the genus which occur in this country, and as a result of his work he has been able to prepare a table which will greatly simplify the work of those collectors who have hitherto found considerable difficulty in identifying their captures. I have already myself found the table of much use in revising my own exponents of the genus. I find, however, that I have taken *umbratus*, Er., fairly commonly in refuse in my own garden, and I do not consider this species is as rare as Mr. Chitty seems to think. The third paper (*Ent. Rec.*, vol. xix., p. 77) is by Mr. F. Balfour Browne on "The Specific Characters of *Hydroporus incognitus*, Shp."; the paper is illustrated by a carefully drawn plate. The author is able to show quite clearly from his dissections and drawings that *incognitus* is quite distinct from *palustris*.

Mr. Donisthorpe has continued his researches on the inhabitants of ants' nests, and in two papers (*loc. cit.*, pp. 4 and 254) has summarised the results of his work in the field, and of his careful observations with his experimental nests; the year has been remarkable for the large number of specimens of *Lomechusa strumosa*, F., which have been found at Woking. Mr. Donisthorpe, I may mention, had a most interesting exhibit at the annual soirée of the Royal Society in May last, which attracted much attention; the success which has crowned Mr. Donisthorpe's patient and laborious investigations in this field of work show how good it would be if every one of our coleopterists were thus to map out a field of study for himself, and to abandon the idea that to fill store-boxes or cabinets with rows of neatly-set specimens is the only ambition of an entomologist.

The *Transactions of the Entomological Society of London* for 1907 are of exceptional interest to the coleopterist, and as Parts iii and iv of 1906 did not appear until January 23rd, 1907, I must also deal with them. The first paper in Part iii of 1906 is by Prof. Poulton, on "Predaceous insects and their prey" (p. 323), a most valuable memoir, containing a perfect mine of information. In the table of insects attacked by *Asilidae*, I find forty species of coleoptera, mostly conspicuous day-fliers and flower-haunters, and about half of them specially protected; the records of attacks on coleoptera by predaceous insects of the orders Neuroptera and Hemiptera are too few to allow any conclusions to be drawn, and, strangely enough, there are only eight records in all of attacks by predaceous coleoptera on brethren of their

own order; the scanty records are probably due not so much to want of observation on the part of our field naturalists, as to the fact that by far the larger proportion of predaceous coleoptera are nocturnal insects, and seek their prey, therefore, at a time when observation is almost impossible. It would be a great advantage in obtaining such records if every field-worker would provide himself with a note-book as part of his equipment, in which notes of attacks on insects could be recorded at the time they are observed; it is not always possible to capture the aggressor. Valuable as are the records given by Prof. Poulton, in my opinion they are at present too few in number to allow of any generalisation from them; when one considers the enormous number of attacks by predaceous insects which must constantly be going on in all parts of the world, and how very few of these can come under observation, it seems rash to conclude that the records are necessarily averages of the whole number.

In the same part of the *Transactions* appeared (p. 441) Mr. G. J. Arrow's paper, "A Contribution to the Classification of the Coleopterous Family *Passalidae*." The author pointed out that the remarkable secondary adaptation of the wings to serve as organs of sound-production is accompanied by a tendency to the loss of their primary function, and species are found, in different parts of the family, in which they are already useless for flight. As a result, locomotion has become restricted, and segregation into local forms has been brought about, which is too recent for marked specific differentiation. Mr. Arrow has endeavoured to correct some of the errors into which Kuwert had fallen owing to the latter's attempt to achieve finality without having a sufficient amount of material for study. The remainder of the paper is devoted to a description of one new species from Granada, and of eighteen other new species of the family, the types of which are in the British Museum.

In Part i of the *Transactions* for 1907 (issued on June 20th) are four papers of interest to coleopterists. Mr. E. A. Elliott and Mr. C. Morley in their memoir "On the Hymenopterous Parasites of Coleoptera" (p. 17) have brought together into a convenient form for reference a large number of records scattered through British and continental magazines, and in such works as Ratzeburg's "Ichneumonen der Forstinsekten"; this paper will be most useful for reference purposes to entomologists working at the economic side of our subject, since it is to these hymenopterous parasites that we must look for a real effective check upon the ravages of the Scolytids and other destructive beetle-pests.

The second paper (p. 83), by Mr. R. Shelford, on "The Larva of *Collyris emarginatus*, Dej.," is illustrated by a plate; there is a full description of the larvæ, and an account of its life-history; this Cicindelid larva burrows in the central pith of twigs of the coffee shrubs in Java, its food being the ants and aphides which frequent the shrubs, and it finally pupates in the burrow; its life-history is, therefore, very similar to that of the larva of our common *Cicindela campestris*, L., whose burrows may be found in sandy spots in districts where it occurs. In an addendum an account is given of the habits of another Cicindelid wood-boring larva found at Hong-kong by Mr. Muir; it appears to be the larva of another species of *Collyris*.

Mr. A. M. Lee, in a paper (p. 135) entitled "Catalogue of the

Australian and Tasmanian *Byrrhidae*, with Descriptions of New Species," described seven new species of the genus *Pedilophorus*, and also gave a list of all the previously described species of the family.

The last paper in this part is one by Dr. Chapman and Mr. G. C. Champion on "Entomology in N.-W. Spain (Galicia and Leon)," describing their sixth entomological journey to the peninsula, this time to its north-west corner; the visit lasted from mid-June to mid-July, and, after an account of the route traversed and of the natural features of the country in which they collected, the authors give brief lists of the species collected, with notes as to their habits and localities. Mr. Champion is responsible for that part which deals with the coleoptera.

In Part ii of the *Transactions*, issued on September 26th, are several papers dealing with coleoptera; the first (p. 183), by the Rev. G. A. Crawshay, deals with the life-history of *Tetropium gabrielli*, Ws., and is illustrated by six excellent plates. This is one of the most interesting papers to British coleopterists which has appeared in the *Transactions* for several years. Mr. Crawshay has bred this species right through from the egg to the imago, and has given a complete account of all the stages and of the habits of the larvæ; the methods he adopted for breeding the insect and, at the same time, keeping the larvæ under close observation were most ingenious, and reflect great credit upon the author; perhaps the most remarkable of his experiments was the breeding of the perfect insect within three months of the egg-laying of the parents, entirely in the open air, due to the exceptional heat of the summer of 1906. The success which has attended Mr. Crawshay's work will, it is hoped, induce other coleopterists to attempt similar experimental research with others of our longicorns.

Mr. Kershaw and Mr. Muir contributed a paper (p. 249) on the egg-cases and early stages of some South China *Cassididae*, in which they described the egg-cases and larvæ of four species—*Coptocycla circumdata*, Hbst., which does not cover the egg-case with excremental matter; *Aspidomorpha micans*, Fab., which, sometimes in captivity, but never in nature, partially covers its egg-case with excrement; *Laccoptera chinensis*, Fab., which usually covers its egg-case with excremental matter; and, lastly, *Cassida obtusata*, Boh., which always has bare egg-cases. The authors express the opinion that, at present, it is not possible to state definitely that these egg-cases are solely for protection against enemies or drought.

The last paper in this Part (p. 309) is a joint one by Messrs. Dixey and Longstaff, descriptive of their entomological observations and captures during the visit of the British Association to South Africa in 1905. As these gentlemen were almost constantly on the move during the eight weeks they spent in the sub-continent, and as they were collecting insects of all orders (they secured 2500 specimens in all), they could of necessity only skim the surface, so to speak, of the collecting possibilities, yet they added several new species to the lists of the fauna of South Africa. The number of species of coleoptera collected was small, and I am afraid not much additional information as to the geographical distribution of the species of this order has been brought to light by their work; no one who has not been trained to

collect coleoptera, can possibly fairly sample the beetles of any district during such a hurried journey as this was.

In Part iii of the *Transactions*, which was issued on November 20th, appeared a list of the coleoptera of the Maltese Islands, by Mr. M. Cameron and Mr. A. C. Gatto. The actual list is preceded by a general description of this group of islands, and a few notes on the previous information which has been published in regard to the Maltese coleoptera. Further researches will no doubt add largely to the list the authors have been able to compile.

The second edition of Heyden, Reitter, and Weise's *Catalogue of the Coleoptera of Europe* has this year become available to students; this thick volume of 750 columns is an immense advance on the first edition of 1891, and is indispensable to every worker in this branch of entomology; it is not perfect, it is impossible for such a catalogue ever to be free from errors; I have already mentioned one case in which two distinct species have been confused under one specific name, but at any rate it is the high-water mark of our present knowledge of the coleoptera of Europe.

Three valuable local lists have also appeared—Commander Walker's "Oxford List," which gives the names of all the species taken within a seven-mile radius of the centre of Oxford from 1819-1907; there are 1399 in the total, with notes as to their habits, etc. The list has been carefully compiled, and the quality of the work is what we always expect from its indefatigable author; he promises soon to issue a supplement. In connection with the "Victoria History of the Counties of England," two lists have been published; in the Yorkshire volume, there is a list of 1707 species found in the county of broad acres, a total which is bound to be much increased later on, the list is due to Mr. E. S. Bayford and Mr. M. L. Thomson; and the Devonshire volume contains a list of the coleoptera of the county prepared by Mr. J. H. Keys.

In my "Retrospect for 1906" (*Ent. Rec.*, vol. xix., p. 33), I briefly alluded to Mr. F. Balfour-Browne's second paper on the aquatic coleoptera and their surroundings in the Norfolk Broads (*Transactions of the Norfolk and Norwich Naturalists' Society*, vol. viii., p. 290). I have now had the opportunity of studying this paper, which is as thorough a piece of work as that described in the first paper. The author has modified the method adopted in his first paper for mapping out the results of his collections, and the curves in this paper supersede those of the previous one. In regard to the question as to whether the *Hydradephaga* are double-brooded, Mr. Balfour-Browne is now inclined to think that the conclusions he came to as the result of the investigations reported in his first paper are wrong, and that all the evidence he has now been able to gather with regard to egg-laying, larvæ, and immature imagines points to one cycle only in each year. In regard to the problem he discusses as to what becomes of water-beetles when the home-pond, or dyke, dries up, an observation of my own may be of value. I was collecting in the marshes below Gravesend in September, 1899, after a very hot and dry summer, and came across a perfectly dried-up pond, the bottom of which was covered with dry, caked, and cracked, black mud; on pulling up some of these dry-looking slabs, I found the underside was moist, and lying between them and the still moist lower mud were hundreds of

specimens of *Agabus conspersus*, Marsh., which were evidently æstivating so to speak till the autumn rains, which came on a few days later, should again fill up their pond with water. I would advise every coleopterist to obtain a copy of this paper, and to read first of all, and remember always, the last two paragraphs; the reproach levelled at our heads is thoroughly deserved, and, until there is a radical change in the method of work of the majority of entomologists, it will remain true that "entomology is still chiefly a playground for the collector."

My own chief contribution to the literature of the subject during 1907, was my vice-presidential address to the Lancashire and Cheshire Entomological Society; it has appeared in their "Annual Report and Proceedings." Its main feature was a series of suggestions as to the methods by which the work of such local societies might be made more fruitful and more truly scientific.

I close my Retrospect with the feeling that 1907 has seen a fair amount of really good work, but I must repeat my annual grumble that the output is by no means commensurate with what we can reasonably expect; if those who are devoting themselves to this branch of entomological science would remember that they will do little that will last until they train themselves by study and by patient labour to become biologists in the true sense of the word, we should soon see a wonderful increase in that class of papers for which I may take as types those due to Mr. Crawshay and to Mr. Balfour-Browne.

Notes on Lepidoptera During the Season 1907.

By PERCY C. REID, F.E.S.

My work for the year 1907 commenced on March 1st (except for a few larvæ of *Ægeria tipuliformis*, which I collected in my garden in February), when I ran down to Dawlish for a few days. *Larentia multistrigaria* was fairly common and in excellent condition on The Warren, and I secured two larvæ of *Stilbia anomala* and a quantity of those of *Epunda lichenea*, the imagines appearing during the last fortnight of September. From the *E. lichenea* I subsequently obtained ova and the young larvæ are now feeding. On March 10th some larvæ of *Macrothylacia rubi* and *Phragmatobia fuliginosa* obtained during the previous autumn in Rossshire, began to move after hybernation. On March 14th I went for a week into Kent in search of mines of *Ægeria andrenaeformis*, and succeeded well, as larvæ were not rare in *Viburnum lantana*, though hard to find until one got used to the search; altogether I bred just two dozen from three dozen mines. They emerged between June 26th and July 19th; I merely stood the mined stems in a cage in a little earth which I occasionally moistened. The imagines all appeared in the morning, usually about eight to nine o'clock. On my return home *Phigalia pedaria* and *Asphalia flavicornis* were emerging. A visit to the woods in this neighbourhood yielded plenty of larvæ of *Ægeria cynipiformis*, and, to a less extent, *Æ. culiciformis*, while those of *Trochilium crabroniforme* were to be found in the sallows. *Nyssia hispidaria* appeared at the end of the month, and a single female *N. lapponaria*, the sole representative of a brood of Kinloch-Rannoch larvæ. I find this a most difficult insect to breed, most of the pupæ going over year after year and eventually drying up. At the